

On proceedings
WTB RM-11708 WTB 16-239

Name of filer: Salvatore Irato - IW1AYD

“No, thanks” to the proposed rule change from another side of the same affected world.

1 INTRODUCTION

I am a radio operator, a former telecommunication science student and a member of the world radio operators' community - still looking for the best technologies and integrations developments. All those developments are to be used, as the best permitted data communication modes, to pursue the shared common objectives with all other operators around our world.

As a member of this worldwide community I am writing here to ask that the illustrated proceeding will never become an applicable policy. Not as originally proposed, nor as lately suggested by the FCC.

The Notice of Proposed Rulemaking “WT Docket No. 16-239” for “RM-11708”, on which this response paper is made, contain more flawed assumptions. The two that hereby down I am writing about are about: the sharing of the same sub bands by the most different models of signaling techniques and data rates and thus bandwidth usages.

I could write of many more issues about the proposed rule change: the set of commercial interest surrounding the whole matter; the de facto personal ownership of frequency in use by higher data rate signals against other modes; the de facto crypto algorithms used for those emission as a mean to maintain the higher effectiveness of trade marking for the incoming and outgoing data; the de facto spread of all those wrong radio operations practices for higher data rates emissions not even resembling to the sharing best practices for any frequency on any band assigned to radio operators around the world. And more issues are to be taken in account, that are just the starters.

Nonetheless this short paper will focus only on two of the all major flaws of the given proposal. Both flaws are in plain view. The proposal will force all of us to use the same shared sub bands not taking in account the kind of digital signals to be used there on per use sharing. The two major flaws of this odd point of view are:

1. sharing the very same spaces for different articulated signals is a nightmare for the minuscule bandwidth signals (slow data rates) as today are used;
2. the more bandwidth articulated signals (higher data rates) contain by their designs and implementations schemas both commercial trade mark - non disclosed to public – data translation algorithms.

Not to say that usage patterns show particularly aggressive techniques as to maintain the whole audio base band of the channel in use hogged to the death, pursuing repeated lock station-to-station mechanism of aggressive transmission. As a result, no one of the higher data rate protocol oriented protocols will take care of the initial state of any frequency/channel.

Last but not least, there wouldn't not be any problem - out of the legal acknowledgement when properly given – to use higher signaling rates and thus, but not automatically, higher data rates within purposed sub bands. Well out of the de facto commonly in use worldwide digital smaller sub bands for all the assigned bands.

The problems arise when different data modes – and this is much more specifically connected to some commercial undisclosed data communication protocols – are legally mixed with all other digital modes. Not taking care of the real world out there.

2 BACKGROUND

The data rate for any digital emission must accommodate the de facto community standards existing and thus timely changing for the whole world community of the radio operators.

There are still practiced modes that come from what could be called an ancient view of the digital and analog radio technologies.

It seems that there is space for anyone and at least for the few correspondents that any digital mode could have. More space is de facto issued for each mode that have prominent over other modes operation characteristics or effectiveness and thus a bigger number of operators and operations on going for each 24 hours' period along the world.

This is simply done shifting each digital mode over sub bands and letting those sub bands to grove as traffic increase with variable effectiveness all around the clock for each place on the whole world.

The whole world community is already accommodating over bands, sub bands, clock times, daylight and night, for any community participant and his needs. Out of several observed cases.

It's not to forget that since then anyone of us over the world could find information about several episodes of threatening for any internationally assigned sub band. threatening from what? Well I have to admit my ignorance about all the rules by now in use there, but still I could say that over the last tenth of years I was subjected to interferences by larger bandwidth signal taking place suddenly well over mine or others signal. De facto the proposal of rule change is already made by several individuals well into today. We usually have no way at all to stop those malicious, at least, treats. There are several considerations to make around this de facto status of digital large bandwidths signals, bot technically and politically, but all those are out of scope now.

3 DISCUSSION

The users'/modes method that de facto is regulating the use of sub digital modes bands all around the world and the clock is inherently conscious of bandwidths and operators' abilities for any given digital signal and its characteristics. There are already signals that use segments of ours assigned sub bands that aren't any more in use by others operators/modes. There are operators that control theirs emitted signal, even the with the lowest power and the smallest bandwidths, few tens of Hertz, as not to give

interference. Theirs contacts envelopes may have several minutes of duration over the clock with data rates so low that they literally seem bubbling well inside the noise still having successfully contacts with the other side of the world. Their signal, even if not fully decoded may give steady signs of those activities. Those signal are almost viewable into a proper configured waterfall of the inspected audio base band in use.

3.1 THE PROBLEM WITH AUTOMATION AND BANDWIDTHS

Now the problem with higher data rates and signaling rates seems to target almost all automated transmission. Such transmission that will occur timely or on demand, i.e. timing demanded by the other side, thus not having anyone that should view the audio base band channel for the used frequency. In turn those automated signals may destroy any communication to be placed or in place on the same and the nearby, referring to a common audio baseband channel of 3 KHz, frequency. Automated transmission done in few KHz doesn't recognize any other digital mode out of the same. That's the way as they are made or built or constructed, whatever they are. Promised and in use fast digital modes with signaling and data rate build for automated operations doesn't recognize anything out of their self as an already occupied channel. Operators are needed at every time to check the real vacancy of any channel. But this is not the way as higher data rate signals work usually. Automation, the word itself, may suggest it, but it is not. No operator, no control of smaller bandwidth signals, the rule of "don't care" is the meaning of automation.

3.2 PROPRIETARY SIGNALING SCHEMA OF SOME PROTOCOLS

This alone would counsel to have specific sub bands for those high data rate automated signals. Theirs emission storms may stay well away from any sub band dedicated to signal both manually operated and with smaller bandwidth as few hundreds of Hertz down to few tens of Hertz.

There are places in our bands where such 2.5/3 KHz may take space, as Phone more favorably sliceable sub bands by example. But why it is needed that those automated large bandwidths should stay out of conventionally already used digital small bandwidths signals? There is also another strong reason. Much more functional than aesthetical. Large bandwidths digital signal at least for one of the proposed characters, i.e. PACTOR™, aren't ethically pursuable by all the radio operators all over the world. By any mean all the operator that could receive interferences from this kind of signals, automated emissions by the way. Those protocols are almost not decodable with standard tools. PACTOR™ protocols and modulations schemas aren't free, they are at different level trade mark of the producer. This will severely limit the ability of any radio operator under arming interference to recognize the source and to ask about channel clearance. Thus there is a second and maybe strongest reason to limit the supposed so "noninterference digital sub band sharing" in between those particular emissions. That is, If the radio operator of the automated (so, witch operator?) doesn't take care of the initial state – occupied or free – of the frequency to be used, there is no way to identify anymore who is on the frequency. The emitted signal going to the higher signaling speed and thus bandwidth will use such as proprietary signaling techniques and protocols that wouldn't permit the identification without the same – and today single – piece of hardware sunning the trade marked firmware/software.

4 CONCLUSION

Without any doubt there are several reason not to mix latest technology of wide bandwidth data transmission, worst for the automated ones, with narrow and narrowest bandwidth data transmission on the same, sharing, sub bands.

This basic error, mixing two oddly made bandwidth, will not give in the bigger majority of times the ability to any radio operator, in all the sharing:

- a) to discover who is using the frequency for the wider bandwidth operator
 - a. it is detrimental for the narrow band operator/s that already use the same frequency;
 - b. this is much true for broader band signals radio operator that leave their electronic apparatus going by itself, automated operation that doesn't have by any mean the ability to understand who is using the frequency or, more simply, if the frequency is in use;
 - c. this is still true for the not automatic broader band signals radio operator that will not have the ability to view or decode narrow band signal as a mean to understand who is there or, more simply, if the frequency is in use;
- b) The commercial wider bandwidth "modems" doesn't have the ability called in a.a and a.b, they simply fire the transmitted audio signals over the air if there is not a signal that they don't as a data signal as they known data;
 - a. Those commercial wider_ bandwidth/high_data_rate "modems" have no by any mean the ability to recognize any other signal than the one transmitted by a similar or complementary signal;
- c) The commercial wider bandwidth "modems" will come into a proprietary schema of signaling that will prevent the identification of their signal without the use of a paired, trademarked, apparatus; thus preventing the de facto ID anyone not using the same black box;
 - a. not incidentally even if hardy to be done any ID recognition will be rendered well after the narrower band signal on going communication, thus it will a post mortem discovery of who is interfering on who, quite at all not useful if not for statistics.

All this, and more not here written, should tell even to who the more not willingly to acknowledge that calling for frequency sharing for a large amount of signals under the name of wider and narrower digital signals will become an unfair scenario usage for narrower signals radio operator. Mix 500 Hz or less narrow signals and 2.5 KHz or wider signals will become unfair for the narrower signals.

A solution, as technology advance are one of the most needed thing - low power IoT from dispersed devices over a wide area, would be to have a different sub bands allocation for wideband than for the narrowband digital signals. There is a lot space on the phone allocations sub bands, out of the CW and the under 500 Hz digital sub bands. The use of the wide band digital signaling into those Phone sub bands will not be interference prone as it is for sure into the narrower digital signals sub

bands. And congestions may be mitigated by the simpler voice id as the two kind of signals share for sure the same bandwidth and maybe the same LSB/USB usage schema.

Thanks for time and the effort to read this small document. All written in the hope to still have the ability to pursue the wonderful radio operator way not becoming a mere number in statistic of broadband versus narrowband issues. As the works of us as radio operator is not restricted by country borders and habits.

Best regards.

Salvatore Irato, IW1AYD